



W07 – Housing Regeneration and Maintenance

**STRATEGIES FOR HOUSING REGENERATION
IN CITY CENTRES. AN OPPORTUNITY TO
INCORPORATE BIOCLIMATIC CRITERIA IN
LAVAPIES, MADRID (SPAIN)**

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**Strategies for housing regeneration in city centres. An
opportunity to incorporate bioclimatic criteria in Lavapies,
Madrid (Spain)**

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Abstract: According to the OECD 1992 report about Spanish distressed urban areas, in 1992 17% of the vulnerable population lived in old neighbourhoods or historical cities centres. This paper explores different proposals and interventions to improve housing conditions in Lavapies (Madrid).

From its very beginning Lavapies was a slum quarter, where dangerous and insane activities could be developed. Plots were progressively densified, with new constructions over what previously were house gardens (vegetables); and also by increasing the height of the buildings. Tenement houses (corralas) were originally the lowest level for accommodation in Spain. Still now housing conditions are usually insalubrious and it is almost impossible for the sun and fresh air to reach inside the inner houses.

Nowadays the quarter is targeted for low classes and immigrants, but also for bohemia people. Property is very fragmented and changes a lot. It is not easy to find ways of improving conditions without expelling traditional residents. The area has been declared of special interest for rehabilitation (with incentives and subsidies). The office in charge of rehabilitation has made studies to incorporate sustainable criteria in the process. But public intervention to rehabilitate residence buildings is really difficult to go ahead, so they concentrate on improving streets and public spaces trying to make the neighbourhood more appealing. Also some important public buildings have been renovated aimed to be paradigmatic.

The paper focuses on the scale of the intervention, showing how habitability can be improved without changing morphology, by studying local conditions and by adapting the limits of each individual intervention to reach interaction between different plots.

Long history of overcrowding

Ground floor was used for commerce and taverns, and also for handcraft workshop, creating a productive microcosm.



Figure 1. Lavapies 1870. Buildings had already expanded inside the plots.

It has to be noticed that, since its origin, public space morphology has not changed, streets remain the same, unsuitable for wheeled traffic and parking. Besides that, as streets did not change but height of buildings did increase, it's almost impossible for the sun and fresh air to reach inside the inner houses. Therefore housing conditions are usually insalubrious.

Social characteristics

The quarter is a destiny for immigration. And also for “alternatives” and bohemia people. Along with large-scale immigration, a gentrification process is also taking place. Spatial distribution within buildings is linked to social position, -historically lower status was linked to more elevated housing, whereas lower status drives towards inner spaces. Houses facing the street are bigger, better illuminated, with balconies, with charm. It is not like that at the back, where there are more than 2.000 shabby dwellings, many of them catalogued as shanties. Immigrants with no resources are packed into those insalubrious “holes”.

Immigrants proportion is closely related to habitability conditions, they concentrate in those buildings demanding huge reforms, lacking basic infrastructures and with small dwellings (sometimes as small as 11 m2).

Demographic distribution helps us to understand social composition, even if the real amount of inhabitants is impossible to know, as census numbers only include those who are officially registered. Anyway in the quarter and especially in the block that will be analyzed, there is not a balanced pyramid. As we can see in figure 2, young men prevail, and they are mostly immigrants.

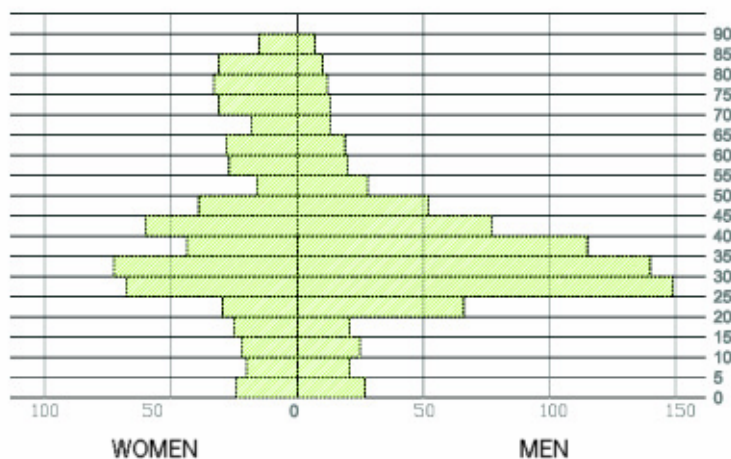


Figure 2. 2004 Demographic distribution. Block Amparo (Lavapies)

Housing conditions

Housing conditions will be explained by analyzing a paradigmatic block in the middle of Lavapies, which can be seen as an example.

Habitability

More than 4.000 dwellings in Lavapies need renewal; rehabilitation programs aim to improve housing's habitability conditions and to comply with legislation requirements. They are usually focused on physical renewal or installation of infrastructures and on safety conditions. Usually after rehabilitation spatial and living quality has not changed at all, and illumination, ventilation, and size remain the same.

Illumination and thermal confort

To ensure appropriate daylighting, it should be noticed that illuminance inside and outside a space are directly related, the former depends on the area of sky visible from the point considered. Figure 4 indicates the buildings where skydome is completely obstructed in more than 50% of the dwellings.

Courtyards proportions are a key factor to ensure skydome visibility, but also to benefit from sun irradiation in winter. But as solar declination in winter is lower, sun rays do not reach inside dwellings. That happens only in summer, when solar irradiation introduces problems of overheating, and inverse heating.

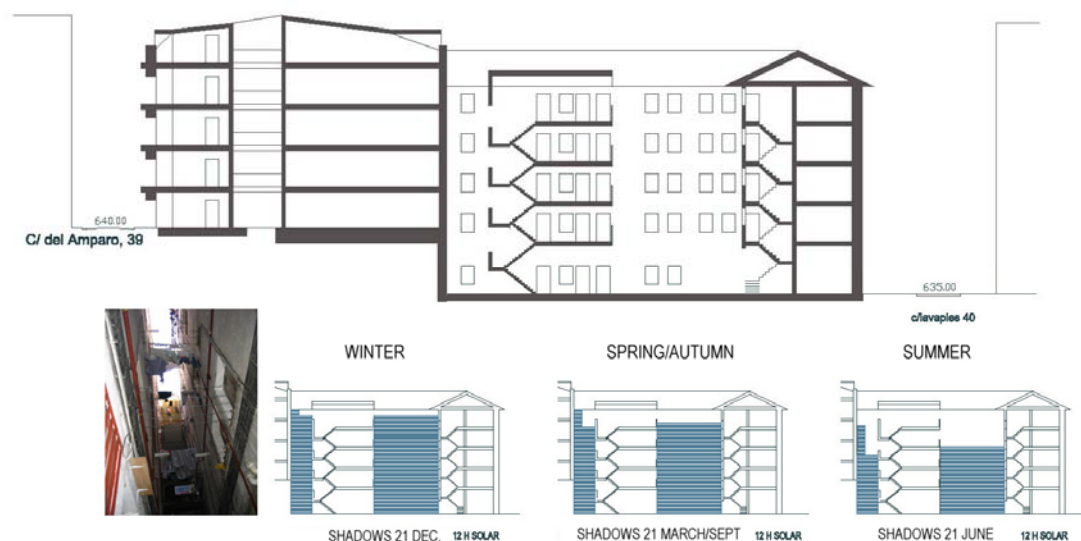


Figure 3. Section c/Lavapies 40. Sun reaches some interior dwellings only in summer, overheating small courtyards.

Natural ventilation

Outdoor air ventilation contributes to healthy and comfortable conditions for building occupants without the use of fans. Natural ventilation provides free cooling without the use of mechanical (and more expensive) systems, reducing energy consumption and heat emissions to the public space.



Figure 4. Dwellings lacking basic habitability conditions. 2006

Finding a solution

Historical approaches

How to face the problem? In the 40s, the Master Plan Bigador 1944 traced alignments and even squares eliminating the interior of the blocks. It was not applied but it was also not forgotten. The proposal given by a new Plan in 1990 was known as “patios azules” (blue courtyards), a line parallel to the façade was drawn, and if applied it would have shifted the traditional corralas and morphology into regular blocks like those in extension areas.

In the late seventies things changed and protection plans were approved (not only for Lavapies, but for the whole center and historic extension).

Improving public space and public buildings

Later on, taking into account the gradual decay of the historical centre, the three administrations (State, Regional and Local) signed several agreements for the Rehabilitation of the Residential and Urban Built-up Estate.

In 1997 Lavapies was designed “Area for Priority Rehabilitation”, that means a homogeneously deteriorated area which is part of a historical quarter. Projects to improve urban environment were partially co-financed with Cohesion Funds.

Since then, projects for squares or streets -the outstanding urban spaces- have been developed, through public contribution. By these Architectural Adaptation Schemes outside elements of buildings have been improved and also obsolete urban installations have been renovated, in agreement with the Companies: Telephone, Gas, Electricity, etc. Works on public space also aim to introduce a new urban design that “fulfil human needs better, improving accessibility, tempering wheeled traffic, planting small trees, with drip irrigation, creating areas for pedestrians to rest, environmental adaptation and aesthetical quality of thoroughfares to make them attractive to non-resident pedestrians so as to increase commercial activities” (EMV, 1998). Most streets have been improved as a lot of reurbanization has been undertaken and streets sections have been redesigned to switch better for pedestrians.

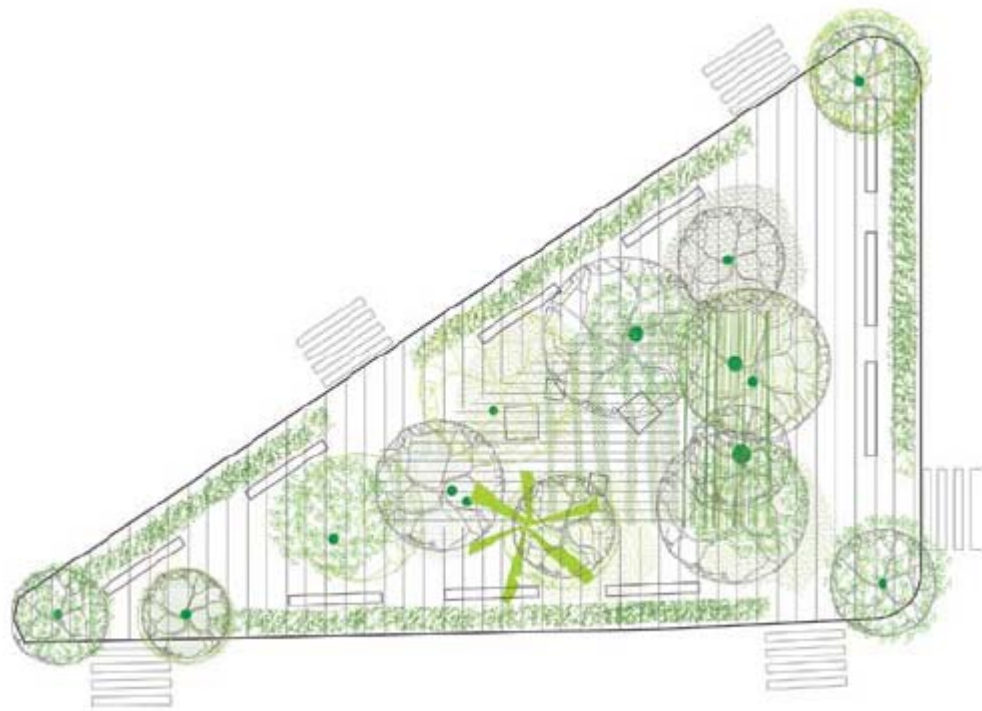


Figure 5. Proposal of reurbanization of Lavapies square. (Molina, Berrocal, Mata)

Another formula for action has been the rehabilitation of thorough fares within the Theatre Itineraries covered by the URBAN projects, the basis of which is connected to the areas for rehabilitation, as they contain streets which are focal points for prostitution and socially outcast people. What has been criticized is that most of the interventions are done thinking in tourism, not in neighbours, who would better appreciate having more facilities and local commerce. And they are the real driver to bring the place alive, not like a museum or scenery.

On the other side the owners or the tenants of housing blocks have improved (but to a less extent) their building by means of private grants covering up to 50%-60% of the budget that can be subsidised for the works. Although there were tax incentives and subsidies, goals were not reached and an important amount of deteriorated buildings have not been refurbished. Propiety is very fragmented and changes a lot, making rehabilitation projects non-viable. Finding ways to improve conditions without expelling traditional residents is not easy at all.

An alternative approach

We propose a new scale of intervention to generate synergies between properties. Nowadays plot division constrains interventions and makes it impossible to preserve morphology and improve housing conditions. Instead of thinking about big scale solutions (blue courtyards) or individual solutions (plot by plot) the proposal identifies areas which could benefit from cooperative intervention.

Current habitability problems are partly consequence from the historical process of block and plot occupation. Originally individual plots were long, with reduced front side facing streets; communication corridors were set along each plot giving access to narrow bay dwellings and generating very small courtyards.

In adjacent plots which share the same problems, unitary interventions could lead to optimized solutions with a re-distribution of flats and re-size of buildings. Dwellings and

courtyards proportions can be improved and space needed for corridors reduced. By the way sun, illumination and ventilation conditions would be improved without reducing total building area, a key factor to ensure rehabilitation's economic viability (figure 6-9).

Proposal for c/Lavapies 40



CURRENT

Interior dwellings: 51

Dwellings < 20 m²: 11

Built area: 1.522 m²

Residential area: 1.291 m² 85%

Communication area: 231 m² 15%

Courtyards area: 47 m² 3%

PROPOSAL

Interior dwellings: 48

Dwellings < 20 m²: 0

Built area: 1.314 m²

Residential area: 1.135 m² 75%

Communication area: 179 m² 12%

Courtyards area: 197 m² 13%

Figure 6. Lavapies 40, current distribution and proposal

As a result of the redistribution of spaces inside the area of intervention, courtyard area has increased in 80 m², with a central courtyard of 104 m², suitable for improving interior dwellings' conditions. 52 m² of corridors have been eliminated and safety accessibility conditions improved. After the intervention every dwelling would have fenestrations facing the big central courtyard and another smaller one, so that rooms may have inlet and outlet openings located in opposing pressure zones.

All dwellings with a surface under 20 m² have been eliminated, and although there would be three dwellings less, they can be placed in c/Amparo 25.

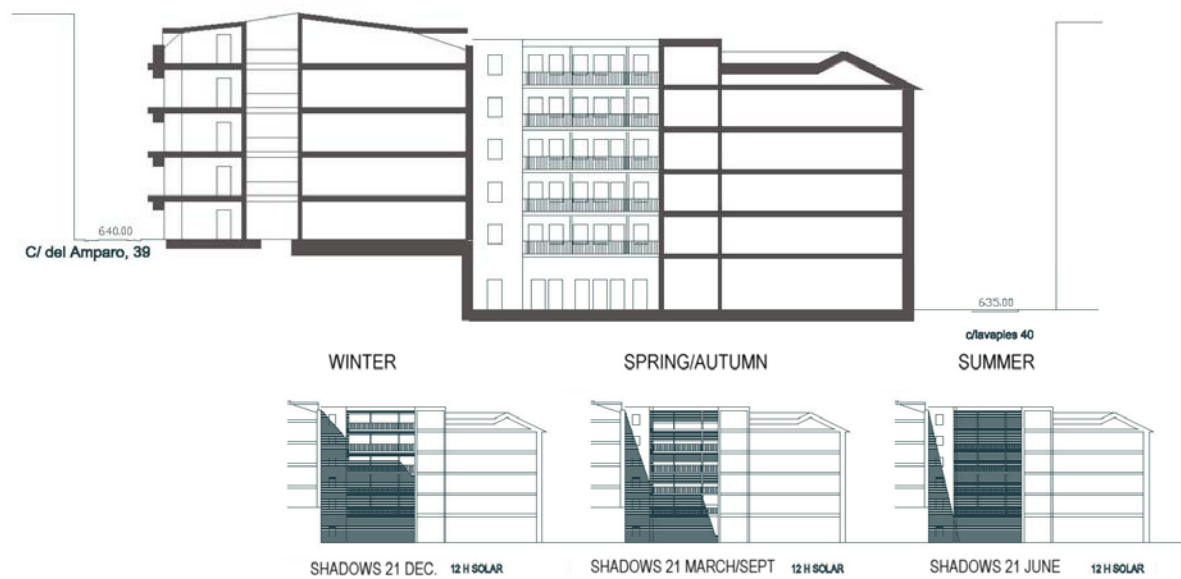


Figure 7. Proposed section Lavapiés 40. New courtyard dimensions improve natural illumination and solar heating in winter but not in summer.

Proposal for c/Amparo 25



CURRENT

Interior dwellings: 18

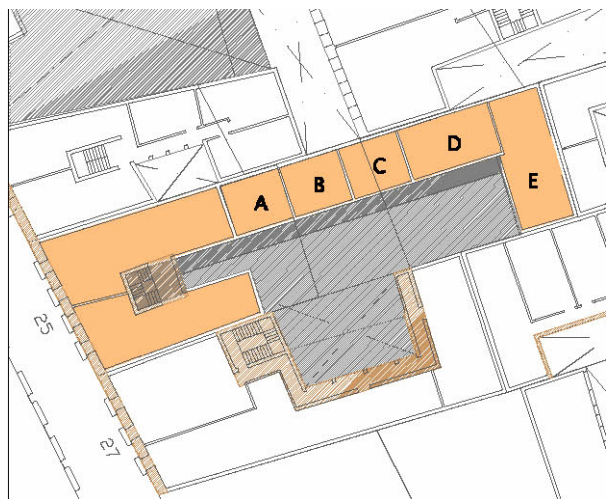
Dwellings < 20 m²: 5

Built area: 1.522 m²

Residential area: 492 m² 32%

Communication area: 307m² 20%

Courtyards area: 114 m² 7%



PROPOSAL

Interior dwellings: 48

Dwellings < 20 m²: 0

Built area: 1.314 m²

Residential area: 835 m² 65%

Communication area: 192 m² 15%

Courtyards area: 183 m² 14%

Social use area: 64 m² 5%



Figure 6. Dwellings lacking basic habitability conditions after intervention

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